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|---|--|---|--|--|--|
|   |  | <h1 style="text-align: center;">AWARD/<br/>MODIFICATION</h1>  |  | 3a. ISSUED BY:<br>Office of Naval Research<br>875 N. Randolph Street Suite 1425<br>Arlington VA 22203-1995   |  |
|   |  |   |  | 3b. CFDA:<br>12.300  |  |
| 1. INSTRUMENT TYPE:<br>Grant Award  |  | 2. AUTHORITY:<br>10 USC 2358 and 31 USC 6304, as amended  |  | 3c. DUNS NUMBER:<br>003403953  |  |
| 4. AWARD NO.:<br>N00014-17-1-2571   |  | 5. MODIFICATION NO.:  |  | 6. MODIFICATION TYPE:<br>NEW   |  |
| 8. ACTIVITY/AGENCY PROPOSAL NO.:<br>GRANT12237545   |  | 9. RECIPIENT PROPOSAL NO.:<br>OSP#189974  |  | 10. PROPOSAL DATE:<br>08292016   |  |
| 11. ACTIVITY TYPE:<br>R&D   |  | 12. PROGRAM TYPE:<br>ONR  |  | 7. PR NO.:<br>1000007102   |  |
| 13. ISSUED TO<br>13a. ADDRESS:<br><br>PENNSYLVANIA STATE UNIVERSITY, THE<br>PENN STATE<br>201 OLD MAIN<br>UNIVERSITY PARK PA 16802-1505<br>UNITED STATES OF AMERICA           |  | 13b. CAGE:<br>7A720   |  | 13c. ED/EFT NUMBER:<br>N/A   |  |
| 13d. BUSINESS OFFICE CONTACT:<br>Jessica Hoyt   |  | 14. REMITTANCE ADDRESS (IF DIFFERENT FROM BLOCK 13):<br><br>Same as Block # 13                                  |  |  |  |
| 13e. TELEPHONE NUMBER:<br>814-863-9132  |  |   |  |  |  |
| 15. RESEARCH TITLE AND/OR DESCRIPTION OF PROJECT AND/OR PROPOSAL TITLE:<br>A novel all solid state 100+ channel beam multiplexer for high energy (100 kW-1000 kW) fiber laser |  |   |  |  |  |
| 16. FUNDING   |  | ACTIVITY/AGENCY SHARE   |  | RECIPIENT SHARE  |  |
| PREVIOUSLY OBLIGATED:   |  |   |  | \$0.00   |  |
| OBLIGATED BY THIS ACTION:   |  |   |  | \$20,000.00  |  |
| TOTAL OBLIGATED ON AWARD:   |  |   |  | \$20,000.00  |  |
| FUTURE FUNDING:   |  |   |  | \$1,771,863.00   |  |
| GRANT TOTAL:  |  |   |  | \$1,791,863.00   |  |
| 17. CURRENT FUNDING PERIOD<br>N/A THROUGH N/A   |  |   |  |  |  |
| 18. PERIOD OF PERFORMANCE<br>09/01/2017 THROUGH 08/31/2020  |  |   |  |  |  |
| 19. ACCOUNTING AND APPROPRIATION DATA:<br>See Attached Financial Accounting Data Sheet(s)   |  |   |  |  |  |
| 20a. PRINCIPAL INVESTIGATOR/RECIPIENT<br>TECHNICAL REPRESENTATIVE:<br>Shizhuo Yin   |  | 21. TECHNICAL REPRESENTATIVE<br>21a. NAME: SARWAT CHAPPELL  |  | 21b. CODE:<br>333  |  |
|   |  | 21c. ADDRESS:<br>SEA PLATFORMS & WEAPONS DIV<br>875 N. Randolph Street<br>Arlington VA 22203-1995               |  |  |  |
| 20b. TELEPHONE NUMBER:<br>814-863-4256  |  | 20c. EMAIL ADDRESS:<br>sxy105@psu.edu   |  | 21d. TELEPHONE NUMBER:   |  |
|   |  |   |  | 21e. EMAIL ADDRESS:<br>SARWAT.CHAPPELL@NAVY.MIL  |  |
| 22. AWARDDING OFFICE CONTACT<br>22a. NAME: DIANE GALES  |  | 22b. CODE:<br>BD025   |  | 23a. ADMINISTRATIVE OFFICE:  |  |
| 22c. ADDRESS:<br>Office of Naval Research<br>875 N. Randolph Street Suite 1425<br>Arlington VA 22203-1995   |  | ONR REG Office Chicago<br>Telephone: (312) 886-5423<br>230 South Dearborn<br>CHICAGO IL 60604-1595              |  |  |  |
| 22d. TELEPHONE NUMBER:<br>703-696-2593  |  | 22e. EMAIL ADDRESS:<br>DIANE.GALES@NAVY.MIL   |  | 23b. CODE:<br>N62880   |  |
| 24. SUBMIT PAYMENT REQUEST TO:<br><br>Same as block 23a   |  | 25a. PAYING OFFICE:<br><br>DFAS-CO/NORTH ENTITLEMENT OPERATIONS<br>HQ0337<br>PO Box 182266<br>COLUMBUS OH 43128 |  | 26a. PATENT OFFICE:<br><br>Office of Naval Research<br>ATTN: ONR BDCC<br>One Liberty Center<br>875 North Randolph Street, Suite 1425<br>Arlington, VA 22203-1995 |  |
|   |  | 25b. CODE:<br>HQ0337  |  | 26b. CODE:<br>N00014   |  |

|  |  |   |  |                          |                  |
|--|--|---|--|--------------------------|------------------|
| AWARD NO.<br>N00014-17-1-2571  |  | <b>AWARD/MODIFICATION</b>   |  | MODIFICATION NO.         |                  |
| 27. SPECIAL INSTRUCTIONS:<br>See Special Requirements on Page 5  |  |   |  |                          |                  |
| 28. DELEGATIONS: The administration duties listed below have been delegated to the administrative office (block 23a). Upon request the awarding office contact (block 22) will make their full text available. Please direct questions to the contacts @: <a href="http://www.onr.navy.mil/Contracts-Grants/Regional-Contacts.aspx">http://www.onr.navy.mil/Contracts-Grants/Regional-Contacts.aspx</a>  |  |   |  |                          |                  |
| Full Delegation  |  |   |  |                          |                  |
| 29. TERMS AND CONDITIONS: The following terms and conditions are incorporated herein by reference with the same force and effect as if they were given in full text. Upon request the awarding office contact named in block 22 will make their full text available, or they can be found at the specified URL.  |  |   |  |                          |                  |
| DOCUMENT   |  | URL   |  |                          |                  |
| The following documents may be found at :<br><a href="http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-terms-conditions.aspx">http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-terms-conditions.aspx</a><br>DOD RESEARCH AND DEVELOPMENT GENERAL TERMS AND CONDITIONS (JULY 2016)<br>UAAC ACCEPTANCE C (NOV 2003)<br>UAWA AWARD A (NOV 2003)<br>STANDARD TERMS/CONDITIONS FOR RESEARCH GRANTS (AGENCY SPECIFIC) (FEB 2015) |  |   |  |                          |                  |
| 30. OPTIONS  |  | OPTION NO.  | AMOUNT   | PERIOD                   |                  |
| (1)  |  | MRI Option Yrs (FY20-21)  | \$1,196,553.00   | 09/01/2020 to 08/31/2022 |                  |
| (2)  |  |   |  |                          |                  |
| (3)  |  |   |  |                          |                  |
| (4)  |  |   |  |                          |                  |
| 31. REPORTS: The following reports must be submitted to the indicated addressees, in the indicated quantities, within 90 days following the expiration or termination of the project. Final Technical Reports must have a SF298, Report Documentation Page, accompanying them. Unless otherwise stated in the award/modification, complete Block 12a of the SF298 as follows: "Approved for Public Release; distribution is Unlimited".  |  |   |  |                          |                  |
| ADDRESSEE  |  | REPORT TYPE   |  | COPIES                   |                  |
| See block #21  |  | Final Technical Report with SF298<br>Performance /Technical Report ( As Required ) with SF298   |  | 1<br>1                   |                  |
| See block #23a   |  | Report of Inventions and Subcontracts - DD 882<br>Final Technical Report transmittal Letter only<br>Performance /Technical Report ( As Required )<br>Final Federal Financial Status Report - SF425 - Including Line Item 11 |  | 1<br>1<br>1<br>1         |                  |
| Defense Technical Information Center<br>8725 John J Kingman Road Ste 0944<br>Fort Belvoir, VA 22060-6218   |  | Final Technical Report with SF298<br>Performance /Technical Report ( As Required ) with SF298   |  | 1<br>1                   |                  |
| See block #26a   |  | Report of Inventions and Subcontracts - DD 882  |  | 1                        |                  |
| Naval Research Laboratory<br>ATTN: CODE 5596<br>4555 Overlook Avenue SW<br>Washington, DC 20375-5320   |  | Final Technical Report<br>Performance /Technical Report ( As Required ) with SF298  |  | 1<br>1                   |                  |
| 32. FOR THE RECIPIENT:   |  |   | 33. FOR THE UNITED STATES OF AMERICA   |                          |                  |
| 32a. SIGNATURE OF PERSON AUTHORIZED TO SIGN  |  |   | 33a. SIGNATURE OF AWARDOFFICER<br>Digitally signed by DIANE GALES 1232147012<br>Dated: 2017.04.26 09:44:04 EST |                          |                  |
| 32b. NAME AND TITLE OF SIGNER  |  | 32c. DATE SIGNED  | 33b. NAME AND TITLE OF AWARD OFFICER   |                          | 33c. DATE SIGNED |
|  |  |   | DIANE GALES  |                          | 04/26/2017       |

# FINANCIAL ACCOUNTING DATA SHEET- NAVY

| 1 CONTRACT NUMBER (CRITICAL)<br>N00014-17-1-2571 |                         |                                  | 2 SPIN (CRITICAL)          |                 | 3 MOD (CRITICAL) |   |         | 4 PR NUMBER<br>1000007102 |         |         |                |     |             |   |                      |
|--|-------------------------|----------------------------------|----------------------------|-----------------|------------------|---|---------|---------------------------|---------|---------|----------------|-----|-------------|---|----------------------|
| CLINISLIN  | 6. LINE OF ACCOUNTING   |                                  |                            |                 |                  |   |         |                           |         |         | 7.             |     |             | NAVY INTERNAL<br>USE ONLY<br>REF DOC/ACRN |                      |
|  | A<br>ACRN<br>(CRITICAL) | B<br>APPROPRIATION<br>(CRITICAL) | C<br>SUBHEAD<br>(CRITICAL) | D<br>OBJ<br>CLA | E<br>PARM        | F<br>RFM  | G<br>SA | H<br>AAA<br>(CRITICAL)    | I<br>IT | J<br>PM | K<br>COST CODE |     |             |   | AMOUNT<br>(CRITICAL) |
|  |                         |                                  |                            |                 |                  |   |         |                           |         |         | PROJ<br>UNIT   | MCC | PDI<br>&SUF |   |                      |
|  | AA                      | 1771319                          | W998                       | 410             | 00               | 014   | 0       | 050120                    | 2D      | 000000  | NV0001         | 390 | 183         | \$20,000.00                               |                      |
| PAGE TOTAL                                       |                         |                                  |                            |                 |                  |   |         |                           |         |         |                |     |             | \$20,000.00                               |                      |
| GRAND TOTAL                                      |                         |                                  |                            |                 |                  |   |         |                           |         |         |                |     |             | \$20,000.00                               |                      |
| PREPARED/AUTHORIZED BY                           |                         |                                  |                            |                 |                  | COMPTROLLER APPROVAL<br>FOR FISCAL DATA AND SIGNATURE |         |                           |         |         |                |     |             |   |                      |
| DATE   |                         |                                  |                            |                 |                  | BY _____ for COMPTROLLER, ONR CONTRACT REVIEWED       |         |                           |         |         |                |     |             |   |                      |
|  |                         |                                  |                            |                 |                  | DATE  |         |                           |         |         |                |     |             |   |                      |

**FINANCIAL ACCOUNTING DATA SHEET-NON-NAVY DoD ACTIVITIES**

|  |                   |                       |  |                  |  |                           |  |                                      |
|--|-------------------|-----------------------|--|------------------|--|---------------------------|--|--------------------------------------|
| 1 CONTRACT NUMBER (CRITICAL)<br>N00014-17-1-2571 |                   | 2 SPIIN (CRITICAL)    |  | 3 MOD (CRITICAL) |  | 4 PR NUMBER<br>1000007102 |  |                                      |
| 5 CLIN/SLIN                                      | 6 ACRN (CRITICAL) | 7 ACCOUNTING CITATION |  |                  |  | 8 AMOUNT (CRITICAL)       |  | NAVY INTERNAL LISE ONLY REF DOCIACRN |
|  |                   |                       |  |                  |  |                           |  |                                      |
|  |                   |                       |  |                  |  | PAGE TOTAL                |  |                                      |
|  |                   |                       |  |                  |  | GRAND TOTAL               |  |                                      |
| PREPARED/AUTHORIZED BY                           |                   |                       |  |                  | COMPTROLLER APPROVAL FOR FISCAL DATA AND SIGNATURE |                           |  |                                      |
| DATE   |                   |                       |  |                  | BY _____for COMPTROLLER,ONR CONTRACT REVIEWED      |                           |  |                                      |

|  |                             |                  |
|--|-----------------------------|------------------|
| AWARD NO.<br>N00014-17-1-2571  | <b>SPECIAL REQUIREMENTS</b> | MODIFICATION NO. |
| <p>The Following payment instructions are hereby provided:</p> <p>.</p> <p>Payment Office:</p> <p>.</p> <p>The payment office shall make payment in sequential ACRN order within the award, exhausting all funds in the previous ACRN before paying from the next ACRN using the following sequential order: alpha/alpha; alpha/numeric; numeric/alpha; and numeric/numeric ACRN sequence.</p> <p>.</p> <p>.</p> <p>Grantee:</p> <p>Payment guides are available on the ONR website at the following link: <a href="http://www.onr.navy.mil/Contracts-Grants/manage-grant/grants-payment/electronic-payment.aspx">http://www.onr.navy.mil/Contracts-Grants/manage-grant/grants-payment/electronic-payment.aspx</a></p> |                             |                  |